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Wildlife Inventory Plan
For
St. Catherine Creek National Wildlife Refuge
Natchez, Mississippi
1992

Recommended by:

Thomas J. Grusa 5-4-92
Refuge Manager Date

Reviewed by:

Refuge Manager Date
 5-8-92
 Wildlife Management Biologist Date

Reviewed by:

Dean H. L. Deneel 5-11-92
Associate Manager Date

Approved by:

Phillip S. Moysen 5/12/92
Assistant Regional Director Date

RECEIVED

JUL 10 1992

ST. CATHERINE CREEK
NATIONAL WILDLIFE REFUGE

St. Catherine Creek National Wildlife Refuge
Wildlife Inventory Plan
1992

I. Purpose

St. Catherine Creek National Wildlife Refuge (NWR) was established in 1990 to preserve wintering habitat for North American Waterfowl species in the Lower Mississippi River Valley. Wildlife usage is dependent on the management strategies and operations which create the habitat for mallards, pintails, green-winged teal, wood ducks, other ducks, and non-game birds. Waterfowl use on the refuge will be the main focus of the Wildlife Inventory. At the same time, other inventories will focus on a variety of shorebirds, wading birds, and raptors observed. Conducting and maintaining population records is a means to evaluate the effectiveness of habitat management operations. Wildlife populations are the indicators that determine whether management procedures are accomplishing the goals of preservation, maintenance, and habitat improvement.

II. Procedure

The procedure is to determine usage of wildlife populations on the refuge by maintaining accurate inventory records of migratory waterfowl and other bird species. The best way to thoroughly and efficiently estimate waterfowl concentrations over the refuge is to conduct aerial surveys during the peak fall-winter period. The aerial surveys, however, shall not preclude the use of other survey methods which will also help to substantiate wildlife use on and around the refuge area. Breeding Bird Surveys, Midwinter Bald Eagle Surveys, Midwinter Waterfowl Surveys, and Christmas Bird Counts are standardized survey methods that are conducted annually throughout the state and will help monitor wildlife activity in the area. Shorebird/wading bird surveys, refuge checklists, and casual wildlife observations are the standard mediums used to monitor wildlife species. These surveys will be used in conjunction with the aerial surveys.

While the status of other wildlife populations are equally as important, the effort of monitoring the activity of deer, turkey, wild hogs, etc. will not be inclusive to the avian surveys or mentioned in depth in the Wildlife Inventory Plan. White-tailed deer numbers move on and off the refuge lowland areas as the Mississippi River backwater flooding dictate. Their status, therefore, may vary seasonally. Arrangements will be made with the Southeastern Wildlife Disease Research Team from the University of Georgia to check the condition and population size of the deer herd every two to three years.

A. Aerial Surveys

Aerial surveys will be the method used to census waterfowl populations. The major concentrations of waterfowl exist predominantly during the winter months of November through February. With the combination of refuge crops/waste grain from harvest operations and backwater flooding from the Mississippi River, St. Catherine Creek NWR is an area of significant value. Under backwater flooding conditions, waterfowl tend to scatter in flocks throughout the refuge's diverse network of waterways. These areas are secluded and sometimes very difficult to survey. Aerial surveys will enable full coverage of the refuge more efficiently and will help to establish continuity in the counts from year to year. Ideally, aerial surveys should be conducted monthly during the peak waterfowl season, usually November through February. Timing of the aerial survey within the month will depend on ground reconnaissance of waterfowl populations and the backwater flooding.

Arrangements have been made to use the Service pilot/biologist from the Migratory Bird Office in Lafayette, Louisiana. The pilot/biologist is experienced in conducting aerial waterfowl surveys and is located as close to St. Catherine Creek Refuge as any commercial OAS approved aircraft flight service. Scheduling monthly aerial surveys during the wintering waterfowl season with the Lafayette office will be arranged with advance notice.

If our Service biologist is unable to fly at a particular time, an Office of Aircraft Service (OAS) approved pilot will be contacted. OAS pilots are located in Raymond, Mississippi, Baton Rouge, Louisiana, or Monroe, Louisiana. Every effort will be made to schedule the Service pilot/biologist to fly the surveys.

Flight patterns to census the refuge will be recommended and determined by the pilot/biologist and refuge manager.

Scheduling should be done through the Migratory Bird Office in Lafayette, Louisiana. Contacts are:

Arthur Brazda, Pilot/Biologist
Fred Roetker, Pilot/Biologist
(318) 264-6631

B. Breeding Bird Survey and Midwinter Bald Eagle Survey

The Breeding Bird Survey and Midwinter Bald Eagle Survey are not administered by the refuge but are cooperative

efforts between the Mississippi Department of Wildlife, Fisheries, and Parks and the refuge. They are generally conducted throughout the entire state which assist with national statistics.

The Breeding Bird Survey is conducted in the late spring of the year along a predetermined route of state highways and back roads. Usually the survey is conducted annually by the same one or two experienced surveyors. The data is recorded on a standard breeding bird survey form which includes the name of the survey route and names of observers. The refuge has not been included in either of the two survey routes that have been conducted, however, the information is very useful for looking at specie diversity throughout the general area.

The Midwinter Bald Eagle Survey is part of a nationwide effort to inventory bald eagles throughout the United States. Refuge personnel are responsible for conducting the survey on the refuge in January. Local support from birders to assist in the count is encouraged and welcomed. The use of other individuals in the future will also hopefully improve the area of coverage and better substantiate the data collected. This information is collected and recorded on a standardized National Wildlife Federation Midwinter Bald Eagle Survey Field Form.

The optimum method for counting eagles would be by air in conjunction with an aerial waterfowl survey. Depending upon conditions, a vehicle or boat may also be used.

C. Midwinter Waterfowl Surveys

As part of a servicewide effort to collect waterfowl population data, refuge personnel and volunteer birders will conduct a Midwinter Waterfowl Survey on the refuge. This survey is usually conducted in December-January and could be flown during a regularly scheduled aerial survey. This would be the most practical method because much of the refuge is usually under water at this time of year. The other option is to survey the refuge by boat.

The midwinter waterfowl information is recorded on a standard zone summary form and forwarded to the Wildlife Habitat Management Biologist in Jackson, Mississippi.

D. Christmas Bird Count

The Christmas Bird Count is conducted annually along a predetermined route by members of the local Audubon Chapter and other birders of Adams County. The refuge area has never before been included in the Christmas Bird

Count because the land had been privately owned and may be under water at the time the count is conducted. If added to the survey route, access through the refuge may need to be gained by boat. The informational data would be an asset to the survey in Adams County. Refuge personnel would need to be on hand to oversee this activity.

E. Shorebird and Wading Bird Survey

Shorebird and wading bird use at St. Catherine Creek NWR is tremendous during the spring and fall seasons. Large concentrations are generally observed feeding in the shallows of the wetland impoundments. A shorebird/wading bird survey will be conducted once during the spring and once during the fall migration season using the survey units (Attachment A). A variety of sandpipers use the area as well as wading birds, including great blue herons, little blue herons, green herons, yellow and black crowned night herons, great egrets, snowy and cattle egrets, wood storks, and glossy and white ibis. The survey form used is one designed to record a variety of bird life known to use the refuge (Attachment B). The form includes waterfowl, shorebirds, wading birds, raptors, and songbirds, and also provides space to include unusual sightings of species not normally found in this area.

F. Refuge Checklist/Casual Observations

Another means used to monitor wildlife include a checklist which is posted at the refuge headquarters. Significant species that have been sighted are recorded by date, species, number in a population, location they are observed, and initials of the employee making the observation. All refuge employees are encouraged to be alert to wildlife species, and record their findings on the checklist. This information is valuable and will be used to complete wildlife statistical data.

Several species and sometimes rare species are observed while employees and/or others are engaged in routine refuge work operations. Unexpected sightings of birds can be observed while travelling refuge roads, working on field projects, conducting environmental education programs, or by visitors on a tour through the refuge.

III. Number of Personnel

Presently one refuge staff person is responsible for conducting or scheduling the necessary help required to survey wildlife populations. During those periods of the year when bird populations are few, there is little need for more than one individual to conduct any given survey. However, as

populations and varieties of species increase or peak during a season, it may become necessary to employ the use of more personnel who will be able to accurately record species and quantities.

IV. Qualifications of Participating Personnel

Individuals involved in surveys should have the skills necessary to identify refuge wildlife populations. If and when additional personnel are necessary, the responsibility will be with the refuge manager to recruit personnel with sound birding skills or be able to provide the necessary training. The local Audubon Chapter and other avid birders can be used for a few of the surveys previously mentioned (i.e. Christmas Bird Count).

When surveying wildlife populations, work is performed in a variety of conditions which do not always permit optimum visibility of wildlife. Distance, weather, and habitat conditions will dictate the ease or difficulty of identification. Therefore, surveyors will benefit by having the expertise of knowing bird species by flight patterns, wing and body markings, sizes and shapes, and silhouettes. Living habits, and even the sounds they emit will also help to identify birds when they are not clearly visible.

V. Dates of Inventory

Surveys will help document wildlife use and diversity on this refuge which has little in the way of wildlife population data.

Aerial surveys will be conducted once per month from November through February during the peak waterfowl period. Wading/shorebird surveys will be conducted in the spring and fall. March through May, and September through November mark the times of year when wading/shorebird use is at its peak. All other standardized surveys are scheduled and conducted at their respective times of year.

There are a variety of bird species present at various times of the year. According to casual observers, peak waterfowl numbers predominantly consist of mallards and pintails. However, lesser numbers of ducks and many wading birds and shorebirds are present year-round. Water birds of significant value, include the glossy ibis, wood stork, and white pelican. A variety of raptors take advantage of the refuge. Red-tailed and broad-winged hawks, and American Kestrel are among those that are most commonly observed throughout the year. Others such as the northern harrier only winter here.

VI. Weather Conditions

It is favorable to census waterfowl species in weather conditions that allow for clear visibility, low to moderate winds, and little to no precipitation. However, inclement weather is a factor surveyors must contend with.

Under poor weather conditions, when travel is not possible or advisable, surveys will be postponed until a better day. Surveys are usually scheduled with enough days allotted for just such emergencies. Sometimes adverse weather will provide better data results, however, heavy rains and flood conditions can and will delay most survey efforts at St. Catherine Creek NWR.

VII. Survey Units (aerial and ground/boat)

St. Catherine Creek NWR is comprised of 13,473 acres of cleared agricultural land, bottomland hardwood timber, swamp, and flooded wetlands. The aerial survey will be setup with the input of the pilot/biologist. His experience in aerial waterfowl surveys will be invaluable to determine the best way to census the area. The ground/boat survey is divided into ten units which represent all habitat types on the refuge. The units are the major areas utilized by waterfowl, wading birds, shorebirds, and raptors. (Attachment A) The unit names and corresponding locations include:

- Unit 1. Cypress Swamp
- Unit 2. New Era Slough
- Unit 3. South End of Butler Lake
- Unit 4. North End of Butler Lake
- Unit 5. Blue Hole
- Unit 6. Old St. Catherine Creek at the Bridge
- Unit 7. Long Lake
- Unit 8. River Road Slough
- Unit 9. Impoundment Basins
- Unit 10. Bourke Pond

The units will give surveyors a point of reference with which to run Christmas Bird Count, Breeding Bird Survey, Midwinter Waterfowl Survey, and wading bird and shorebird surveys.

VIII. Transportation

The major means of transportation to conduct the waterfowl survey will be by aircraft once a month from November through February. The refuge can be covered by air more thoroughly particularly during a time of year when much of the refuge is under water. Additional waterfowl counts may need to be done by boat. When road conditions are favorable, surveys can be conducted by four-wheel driven vehicles which are easily maneuvered through the refuge's rough terrain, muddy roads, dense vegetation, and standing water. The surveyor may occasionally need to be away from the vehicle on foot to achieve a better vantage point for observing birds. Once an area is adequately checked and surveyed, the surveyor will proceed by vehicle to the next area of observation.

IX. Census Aids (Binoculars, Spotting Scope, etc.)

Census aids will generally include a field note pad, binoculars (7X35 magnification or greater), spotting scope, and field identification guides. The binoculars and spotting scope are refuge properties that are assigned to personnel for use.

X. Photography

Though not required or always practical, the use of camera equipment is sometimes helpful to document large quantities of birds, capture rare occurrences, and to substantiate estimated population data. The use of telephoto and zoom attachment lenses are also helpful.

XI. Field Forms

After the survey is completed, all field notes and population data are to be transcribed on the appropriate form for each of the various surveys conducted (Breeding Bird Survey, Christmas Bird Count, Midwinter Bald Eagle Survey, Midwinter Waterfowl Survey, etc.). These forms and data information are usually provided and completed by the respective survey coordinators. Refuge personnel may or may not always be directly involved with the more statewide operated surveys, but the information is usually available for refuge use. General waterfowl surveys conducted by air can be completed on the form that was prepared for use at St. Catherine Creek NWR. The form includes a list of many bird species observed or thought to be present on the refuge (Attachment B). Several North American waterfowl species are listed along with many species of shorebirds, wading birds, hawks, and owls. Species that are not included on the list but are observed can be added in the space provided in the lower right hand corner of the form. The bottom portion of the form provides space for remarks or other wildlife species casually observed on the survey route, such as fish,

reptiles, amphibians, or mammals.

XII. Sampling Requirements

Sampling procedures during the respective wildlife inventories include recording all species and numbers observed. Surveyors will attempt to acquire as accurate a representation of significant wildlife species on the refuge as possible by recording those species when they are observed. Populations are determined by counting birds individually and/or by estimating group sizes when they are too numerous to count individually.

XIII. Special Considerations

The major emphasis will be to census waterfowl during the peak waterfowl use season (November-February) by using the aerial survey method. The station budget may restrict utilization of air services, however, accommodations may be worked out by coordinating flights with neighboring refuges at cost reduction benefits. Also, all pilot and aircraft services must be approved by OAS.

XIV. Manpower and Costs

Estimated costs to conduct aerial surveys include:

Migratory Bird Office pilot/biologist to conduct one survey per month for 4 months.

\$117.00 (per hour) X 3.5 hours = \$409.50

(hours include total amount of time from pilot/biologist's point of origin to their return, round trip)

\$409.50 (per survey) X 4 months = \$1,638.00

Costs of ground/boat surveys are nominal and will be included in normal operations.

ST. CATHERINE CREEK NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

ADAMS COUNTY, MISSISSIPPI

UNITED STATES
FISH AND WILDLIFE SERVICE

R 9 E R 10 E

91°25'

WASHINGTON MERIDIAN EAST OF RIVER LOCATION
AT THE TIME OF ORIGINAL GLO SURVEY
(WEST RANGES IN THE WASHINGTON MERIDIAN)LOUISIANA MERIDIAN WEST OF RIVER LOCATION
AT THE TIME OF ORIGINAL GLO SURVEY
(EAST RANGES IN THE LOUISIANA MERIDIAN)

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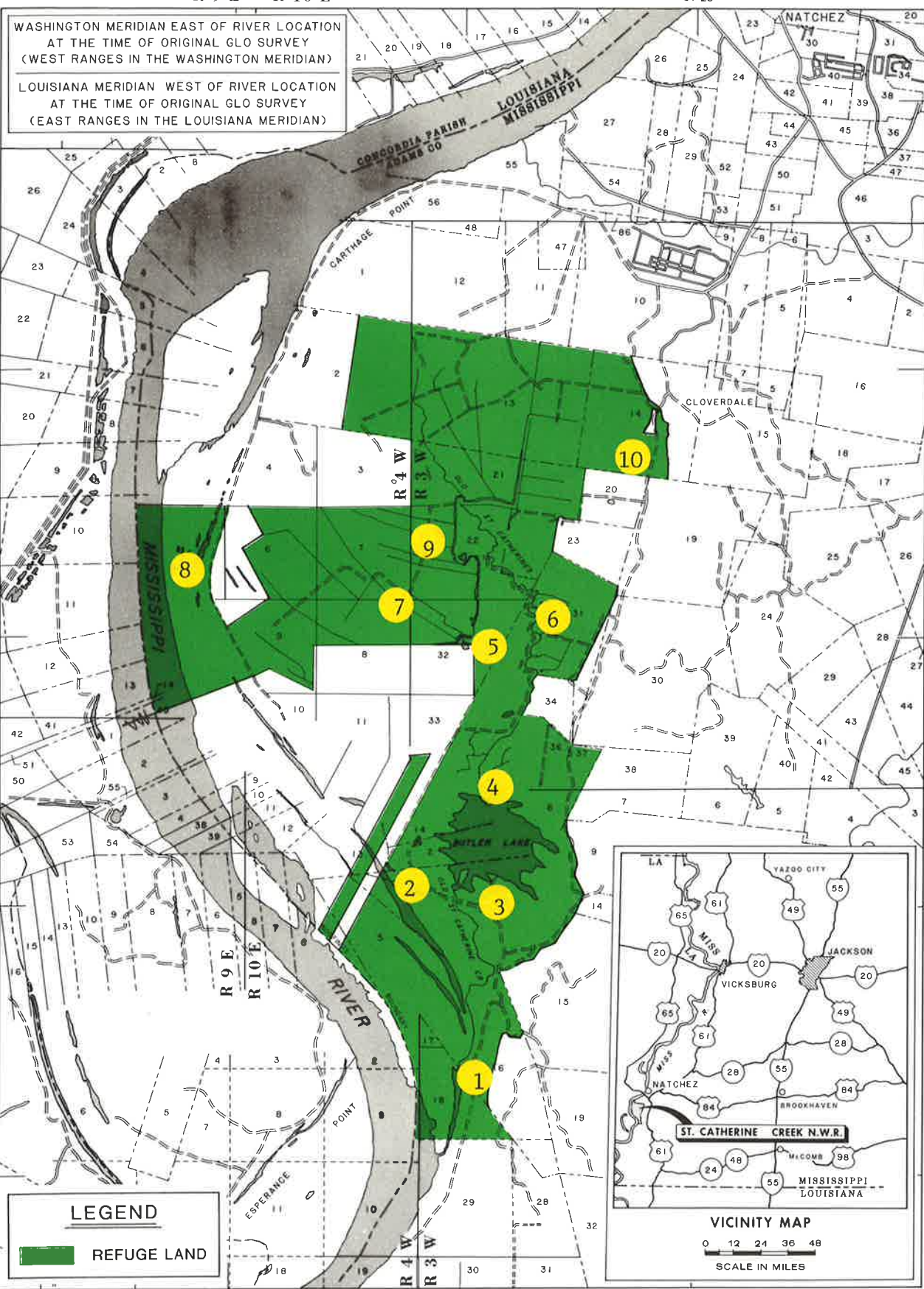
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31°25'

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COMPILED IN THE DIVISION OF REALTY
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WASHINGTON MERIDIAN, MISSISSIPPI0 2000 4000 8000 12000 16000 FEET
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VICINITY MAP

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SCALE IN MILES

ATLANTA, GEORGIA

AUGUST, 1989

True North
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MEAN DECLINATION
1989

WILDLIFE INVENTORY OF ST. CATHERINE CREEK

NATIONAL WILDLIFE REFUGE

Date: _____ Weather: _____
 Time: _____ Other Comments: _____

<u>Species Name</u>	<u>#'s</u>	<u>Species Name</u>	<u>#'s</u>	<u>Species Name</u>	<u>#'s</u>
Pied-Billed Grebe	_____	Lesser Scaup	_____	Lesser Yellowlegs	_____
Horned Grebe	_____	Greater Scaup	_____	Dowitcher (sp.)	_____
White Pelicans	_____	Common Goldeneye	_____	Stilt Sandpiper	_____
Dbl-Crst Cormorant	_____	Bufflehead	_____	Ruddy Turnstone	_____
Anhinga	_____	Ruddy Duck	_____	Dunlin	_____
Great Blue Heron	_____	Red Breasted Merganser	_____	Pectoral Sandpiper	_____
Green Backed Heron	_____	Hooded Merganser	_____	Sanderling	_____
Little blue Heron	_____	Common Merganser	_____	Wht-rump Sandpiper	_____
Great Egret	_____	Turkey Vulture	_____	Baird's Sandpiper	_____
Bl-Crwn Nght Heron	_____	Black Vulture	_____	Least Sandpiper	_____
Yl-Crwn Nght Heron	_____	Mississippi Kite	_____	Semipalm. Sandpiper	_____
Least Bittern	_____	Swallow-tailed Kite	_____		_____
American Bittern	_____	Cooper's Hawk	_____	Wilson's Phalarope	_____
Wood Stork	_____	Sharp SHinned Hawk	_____	Ring-billed Gull	_____
White-Faced Ibis	_____	Marsh Hawk	_____	Franklin's Gull	_____
White Ibis	_____	Rough Legged Hawk	_____	Bonaparte's Gull	_____
Roseate Spoonbill	_____	Red-tailed Hawk	_____	Morning Dove	_____
Sandhill Crane	_____	Red-shouldered Hawk	_____	Ylw-billed Cuckoo	_____
Virginia Rail	_____	Broad-winged Hawk	_____	Blk-billed Cuckoo	_____
Sora	_____	Golden Eagle	_____	Screech Owl	_____
Yellow Rail	_____	Bald Eagle	_____	Great Horned Owl	_____
Black Rail	_____	Osprey	_____	Short-eared Owl	_____
King Rail	_____	Peregrine Falcon	_____	Barn Owl	_____
Common Moorhen	_____	Merlin Hawk	_____	Barred Owl	_____
Purple Gallinule	_____	American Kestrel	_____	Crow	_____
American Coot	_____	Bobwhite	_____	Blue Jay	_____
Canada Goose	_____	Turkey	_____		_____
White Fronted	_____	Semipalmated Plover	_____		_____
Snow Goose	_____	Piping Plover	_____		_____
Blue Goose	_____	American Golden Plover	_____		_____
Mallard	_____	Black-bellied Plover	_____		_____
Black Duck	_____	Killdeer	_____		_____
Gadwall	_____	A. Avocet	_____		_____
Pintail	_____	Black-necked Stilt	_____		_____
Green-winged Teal	_____	American Woodcock	_____		_____
Blue-winged Teal	_____	Common Snipe	_____		_____
Cinnamon Teal	_____		_____		_____
A. Widgeon	_____	Hudsonian Godwit	_____		_____
N. Shoveler	_____	Upland Sandpiper	_____		_____
Wood Duck	_____	Solitary Sandpiper	_____		_____
Redhead	_____	Spotted Sandpiper	_____		_____
Ring-necked	_____	Willet	_____		_____
Canvasback	_____	Greater Yellowlegs	_____		_____
				TOTAL SPECIES	_____

NOTES: _____

Wildlife Inventory Plan
For
St. Catherine Creek National Wildlife Refuge
Natchez, Mississippi
1991

Recommended by:

Thomas J. Sprusa 12-17-91
Refuge Manager Date

Reviewed by:

Wildlife Management Biologist Date

Reviewed by:

Associate Manager Date

Approved by:

Assistant Regional Director Date

St. Catherine Creek National Wildlife Refuge
Wildlife Inventory Plan
1991

I. Purpose

St. Catherine Creek National Wildlife Refuge (NWR) was established in 1990 to preserve wintering habitat for North American Waterfowl species in the Lower Mississippi River Valley. Wildlife usage is dependent on the management strategies and operations which create the ideal habitat for mallards, pintails, green-winged teal, wood ducks, other ducks, and non-game birds. Great efforts will be taken to evaluate waterfowl use on the refuge. At the same time, the inventory will include a variety of shorebirds, wading birds, raptors, and songbirds observed using the refuge. Conducting and maintaining population records is a gauge to evaluate the effectiveness of habitat management operations. Wildlife populations are the indicators that determine whether management procedures are accomplishing the goals of preservation, maintenance, and habitat improvement.

II. Procedure

Generally, the procedure is aimed at conducting weekly wildlife surveys along a predetermined route on the refuge. Counts of waterfowl and other bird species will be recorded and tallied.

A. Number of Personnel

Presently one refuge staff person is responsible for conducting a weekly wildlife survey. During those periods of the year when bird populations are few, there is little need for more than one person to conduct the survey. As populations and varieties of species increase or peak during a season, it may become necessary to employ the use of more personnel who will be able to accurately record species and quantities. It may be beneficial to strategically place 3 to 4 surveyors at different locations throughout the refuge, during peak periods of waterfowl use. Birds could be counted in clearly defined zones which would prevent counting birds more than once.

B. Qualifications of Participating Personnel

Refuge managers should have the skills necessary to identify refuge wildlife populations. If and when recruitment of additional personnel is necessary, the

responsibility will be with the recruiting official to recruit personnel with sound birding skills or be able to provide the necessary training. Because the refuge has a small staff, this is a good opportunity to utilize the support of a qualified volunteer force. The local Audubon Chapter is a good source of willing and able help.

When surveying wildlife populations, work is performed in a variety of conditions which do not always permit optimum visibility of wildlife. Distance, weather, and habitat conditions will dictate the ease or difficulty of identification. Therefore, surveyors will benefit by having the expertise of knowing bird species by flight patterns, wing and body markings, sizes and shapes, and silhouettes. Living habits, and even the sounds they emit will also help to identify birds when they are not clearly visible.

C. Dates of Inventory

St. Catherine Creek NWR is a newly established refuge with little in the way of wildlife population data. The aim of the wildlife inventory is to survey populations regularly in order to obtain population trends. What species exist, when they migrate to and from an area, and why species are present in larger numbers some years over others, are all questions that may be answered or substantiated with survey data.

Refuge personnel will conduct a wildlife survey weekly throughout the year to document what species and numbers are representative during all four seasons. While the main emphasis of the survey will focus on bird life on the refuge, it will also identify other wildlife species observed, such as the river otter, white-tailed deer, feral hogs, and alligators. All of which are known to exist but are rarely observed.

There are a variety of bird species present at various times of the year. According to casual observers, peak waterfowl numbers predominantly consisting of mallards and pintails, usually occur between December and March. However, lesser numbers of ducks and several wading and shorebirds are present year-round. Water birds of significant value using the refuge in the fall and winter include the glossy ibis, wood stork, and white pelican. A variety of raptors take advantage of the refuge.

Red-tailed and broad-winged hawks, and American Kestrel are among those that are most commonly observed throughout the year. Others such as the northern harrier only winter here.

Other surveys which include production surveys, spring brood counts, Christmas Bird Counts, Midwinter Bald Eagle Surveys, and Breeding Bird Surveys will also help document specie activity on the refuge and will lend support to producing informational material such as a general refuge leaflet and bird list for the visiting public. The Breeding Bird Survey and Midwinter Bald Eagle Survey are not administered by the refuge but are cooperative efforts between the Department of Wildlife, Fisheries, and Parks and the refuge. These are generally conducted throughout the entire state, and assist with National statistics, but can also include portions of the refuge. Other means used to monitor wildlife include a checklist which is posted at the refuge headquarters. Significant species that have been sighted are recorded by date, species, number in a population, location they are observed, and initials of the employee making the observation. All refuge employees are encouraged to be alert to wildlife species, and record their findings on the checklist. This information is valuable and will be used to complete wildlife statistical data.

D. Time of Day

The weekly survey is started at dawn, usually mid-week. The early morning hours allow the surveyor to get into position with minimal disturbance to the birds as they loaf and feed.

Surveyors should attempt to be in position at the first survey site at sunrise or 1/2 hour before. There are several stops on the survey route, which takes about four hours to complete. More time may be needed to collect population data as more birds accumulate during the winter season.

E. Weather Conditions

It is favorable to census waterfowl species in weather conditions that allow for clear visibility, low to moderate winds, and little to no precipitation. However, inclement weather is a factor surveyors must contend with.

Under poor weather conditions, when travel is not

possible or advisable, the survey will be postponed until a better day. Sometimes adverse weather will provide better data results, however, heavy rains and flood conditions can and will delay most survey efforts at St. Catherine Creek NWR.

F. Survey Units

St. Catherine Creek NWR is comprised of 13,473 acres of cleared agricultural land, bottomland hardwood timber, swamp, and flooded wetlands. The survey is divided into ten units which represent the previously mentioned habitat types on the refuge. The units are the major areas utilized by waterfowl, wading and shorebird species, and raptors. (See the map on attachment A for unit locations.) The unit names and corresponding locations include:

- Unit 1. Cypress Swamp
- Unit 2. New Era Slough
- Unit 3. South End of Butler Lake
- Unit 4. North End of Butler Lake
- Unit 5. Blue Hole
- Unit 6. Old St. Catherine Creek at the Bridge
- Unit 7. Long Lake
- Unit 8. River Road Slough
- Unit 9. Impoundment Basins
- Unit 10. Bourke Pond

G. Census Route (Observation Sites)

The census route was formulated by conducting several test runs through the refuge to see where the major concentrations of birds were located. As indicated by the map (attachment A), the census route begins with unit 1 and proceeds north in numeric order. Please note, this pattern was established as a means to count the majority of birds as early in the morning as possible. These locations may vary in the order that are surveyed, depending on the dispersement of birds. As observed in the fall of 1991, the greater percentage of birds have been

observed in units 1 through 4 and are surveyed first before they have had time to leave the areas. Again, as patterns of birds change, the survey route may also vary.

H. Transportation

The survey is conducted with a four-wheeled drive vehicle which can be easily maneuvered through the refuge's rough terrain, muddy roads, dense vegetation, and standing water. The vehicle is operated at speeds of no more than 20 mph, where frequent stops are easily and safely made to identify and census birds. The surveyor will occasionally need to be away from the vehicle on foot to achieve a better vantage point for observing birds. Once an area is adequately checked and surveyed, the surveyor will proceed by vehicle to the next unit. In future surveys, the use of 4-wheel drive all terrain vehicles or watercraft may be needed.

I. Census Aids (Binoculars, Spotting Scope, etc.)

Census aids will generally include field recording data forms, binoculars (7X35 magnification or greater), spotting scope, and field identification guides. The binoculars and spotting scope are refuge properties that are assigned to personnel for use.

J. Equipment and Supplies

A minimum supply of equipment will include rain gear, rubber boots, hip boots, and a canoe for some of the water ways that are otherwise difficult to cross.

K. Photography

Though not required or always practical, the use of camera equipment is sometimes helpful to document large quantities of birds, capture rare occurrences, and to substantiate estimated population data. The use of telephoto and zoom lenses are also helpful.

L. Field Forms

All field notes and population data are to be completed on a form that was specifically prepared for use at St. Catherine Creek NWR. The form includes a list of many bird species observed or thought to be present on the refuge (See attachment B). Several North American waterfowl species are listed along with many species of herons, egrets,

sandpipers, hawks, and owls. Species that are not included on the list but are observed can be added in the space provided in the lower right hand corner of the form. The bottom portion of the form provides space for remarks or other wildlife species observed on the survey route, such as fish, reptiles, amphibians, or mammals.

M. Sampling Requirements

Sampling procedures during the wildlife inventory include recording all species and populations observed. Surveyors will attempt to acquire as accurate a representation of significant wildlife species on the refuge as possible by recording those species when they are observed. Populations are determined by counting birds individually and/or by estimating group sizes when they are too numerous to count individually.

III. Special Considerations

This survey should be considered as two inventories combined into one. The major emphasis is to census the waterfowl species observed using the St. Catherine Creek National Wildlife Refuge. Next comes all other species including birds of special significance found in southwestern Mississippi, exotics that may have strayed off the beaten path, and endangered and threatened species.

The major concentrations of mallards, pintails, green-winged teal, and wood ducks exist predominantly during the winter months of December through March. With the combination of waste grain and back water flooding from the Mississippi River, St. Catherine Creek National Wildlife Refuge is an ecosystem of significant value. The winter will be a critical time of year to collect accurate population data, however, there are elements that may affect or bias the surveys which must be considered:

A. St. Catherine Creek NWR receives much of its rainfall in early spring and consequently much of the refuge is under water. As a result, vehicle access to waterfowl use areas would be substantially decreased for several weeks. Unless aircraft or watercraft can be used to gain access to these prime areas, valuable time and population data will be lost.

B. Under normal water levels, bird species tend to scatter in small flocks throughout the refuge's diverse network of waterways. These areas are

secluded and sometimes very difficult to survey. Time and care are important factors in order to collect as accurate and inclusive information as possible.

IV. Manpower and Costs

The costs to conduct the survey include:

40 survey days = 160 hours	=	\$2,400.00
Gasoline	=	\$200.00
Equipment	=	<u>\$500.00</u>
TOTAL	=	\$3,100.00

ST. CATHERINE CREEK NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

ADAMS COUNTY, MISSISSIPPI

UNITED STATES
FISH AND WILDLIFE SERVICE

R 9 E R 10 E

91°25'

WASHINGTON MERIDIAN EAST OF RIVER LOCATION
AT THE TIME OF ORIGINAL GLO SURVEY
(WEST RANGES IN THE WASHINGTON MERIDIAN)

LOUISIANA MERIDIAN WEST OF RIVER LOCATION
AT THE TIME OF ORIGINAL GLO SURVEY
(EAST RANGES IN THE LOUISIANA MERIDIAN)

T 7 N

T 6 N

T 7 N

T 6 N

31°30'

31°30'

T 6 N

T 5 N

T 6 N

T 5 N

31°25'

31°25'

LEGEND

REFUGE LAND

LOUISIANA MERIDIAN, LOUISIANA
WASHINGTON MERIDIAN, MISSISSIPPI

0 2000 4000 8000 12000 16000 FEET

0 1/2 1 2 MILES

VICINITY MAP

0 12 24 36 48

SCALE IN MILES

True North
Magnetic N.

MEAN DECLINATION
1989

COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS BY U. S. G. S.

ATLANTA, GEORGIA AUGUST, 1989

WILDLIFE INVENTORY OF ST. CATHERINE CREEK

NATIONAL WILDLIFE REFUGE

Date: _____ Weather: _____
 Time: _____ Other Comments: _____

<u>Species Name</u>	<u>#'s</u>	<u>Species Name</u>	<u>#'s</u>	<u>Species Name</u>	<u>#'s</u>
Pied-Billed Grebe	_____	Lesser Scaup	_____	Lesser Yellowlegs	_____
Horned Grebe	_____	Greater Scaup	_____	Dowitcher (sp.)	_____
White Pelicans	_____	Common Goldeneye	_____	Stilt Sandpiper	_____
Dbl-Crst Cormorant	_____	Bufflehead	_____	Ruddy Turnstone	_____
Anhinga	_____	Ruddy Duck	_____	Dunlin	_____
Great Blue Heron	_____	Red Breasted Merganser	_____	Pectoral Sandpiper	_____
Green Backed Heron	_____	Hooded Merganser	_____	Sanderling	_____
Little blue Heron	_____	Common Merganser	_____	Wht-rump Sandpiper	_____
Great Egret	_____	Turkey Vulture	_____	Baird's Sandpiper	_____
Bl-Crwn Nght Heron	_____	Black Vulture	_____	Least Sandpiper	_____
Yl-Crwn Nght Heron	_____	Mississippi Kite	_____	Semipalm. Sandpiper	_____
Least Bittern	_____	Swallow-tailed Kite	_____		_____
American Bittern	_____	Cooper's Hawk	_____	Wilson's Phalarope	_____
Wood Stork	_____	Sharp SHinned Hawk	_____	Ring-billed Gull	_____
White-Faced Ibis	_____	Marsh Hawk	_____	Franklin's Gull	_____
White Ibis	_____	Rough Legged Hawk	_____	Bonaparte's Gull	_____
Roseate Spoonbill	_____	Red-tailed Hawk	_____	Morning Dove	_____
Sandhill Crane	_____	Red-shouldered Hawk	_____	Ylw-billed Cuckoo	_____
Virginia Rail	_____	Broad-winged Hawk	_____	Blk-billed Cuckoo	_____
Sora	_____	Golden Eagle	_____	Screech Owl	_____
Yellow Rail	_____	Bald Eagle	_____	Great Horned Owl	_____
Black Rail	_____	Osprey	_____	Short-eared Owl	_____
King Rail	_____	Peregrine Falcon	_____	Barn Owl	_____
Common Moorhen	_____	Merlin Hawk	_____	Barred Owl	_____
Purple Gallinule	_____	American Kestrel	_____	Crow	_____
American Coot	_____	Bobwhite	_____	Blue Jay	_____
Canada Goose	_____	Turkey	_____		_____
White Fronted	_____	Semipalmated Plover	_____		_____
Snow Goose	_____	Piping Plover	_____		_____
Blue Goose	_____	American Golden Plover	_____		_____
Mallard	_____	Black-bellied Plover	_____		_____
Black Duck	_____	Killdeer	_____		_____
Gadwall	_____	A. Avocet	_____		_____
Pintail	_____	Black-necked Stilt	_____		_____
Green-winged Teal	_____	American Woodcock	_____		_____
Blue-winged Teal	_____	Common Snipe	_____		_____
Cinnamon Teal	_____		_____		_____
A. Widgeon	_____	Hudsonian Godwit	_____		_____
N. Shoveler	_____	Upland Sandpiper	_____		_____
Wood Duck	_____	Solitary Sandpiper	_____		_____
Redhead	_____	Spotted Sandpiper	_____		_____
Ring-necked	_____	Willet	_____		_____
Canvasback	_____	Greater Yellowlegs	_____	TOTAL SPECIES	_____

NOTES: _____